OTHER LEIMAN PRODUCTS

AIR MOTORS – UP TO 5 H. P.

GAS BOOSTERS – UP TO 25 LBS.

SANDBLAST MACHINERY

Operating Instructions and Helpful Rules for Operating

LEIMAN BROS.

ROTARY POSITIVE

AIR PUMPS

(4 WING TYPE)

SIZES – A THROUGH – G

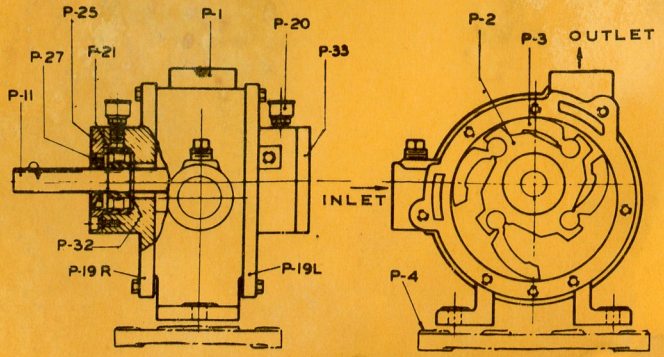
LEIMAN BROS., Inc.

146 to 179 Christie Street

NEWARK, N. J.

Manufacturers of Good Machinery for 65 Years

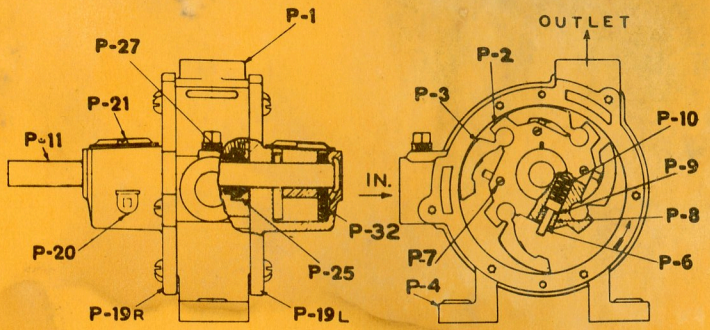
PUMPS WITH ROLLER BEARINGS



LIST OF PARTS

P-1	Cylinder	P-20	Grease Cup (2)
P-2	Piston (With Shaft)	P-21	Roller Bearing (2)
P-3	Wing (4)	P-25	Seal Housing
P-4	Base	P-27	Seal
P-11	Shaft (With Piston)	P-32	Retaining Ring (2)
P-19L	Cylinder Head	P-33	End Cap
P-19R	Cylinder Head		

PUMPS WITH WOOL PACKED BEARINGS



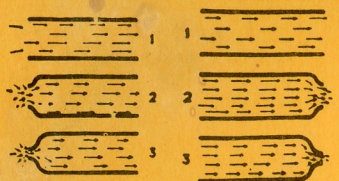
LIST OF PARTS

P-1	Cylinder	P-11	Shaft (With Piston)
P-2	Piston (With Shaft)	P-19L	Cylinder Head
P-3	Wing	P-19R	Cylinder Head
P-4	Leg	P-20	Oil Fill Elbow
*P-6	Push Pin	P-21	Bearing Cover
*P-7	Set Pin	*P-25	Oil Retainer Collar
*P-8	Push Pin Bushing	*P-27	Oil Retainer Spring
*P-9	Push Pin Washer	P-32	Bearing Felt Wick
*P-10	Push Pin Spring		

Detachable legs on "D", "E", "F-8", & "G" pumps only

*"D", "E", "F-8" & "G" pumps only

HOW TO SECURE VACUUM OR PRESSURE



USING THE INLET For Vacuum — USING THE OUTLET For Pressure

No. 1 shows air passing through a pipe creating neither vacuum or pressure.

No. 2 shows air drawn through a reduced inlet, creating vacuum and forced through a reduced outlet creating pressure.

No. 3 shows inlet and outlet further reduced, increasing vacuum and pressure.

The smaller the opening, the higher the pressure or vacuum will be.

IMPORTANT

With new pumps, see that tin plug is removed from inlet and outlet.

Check electric current in building with current of motor for correct running speed. Wrong current may mean wrong speed.

LUBRICATION

For Oiling Instructions on Pumps equipped with automatic Oil-feed system, see page 4.

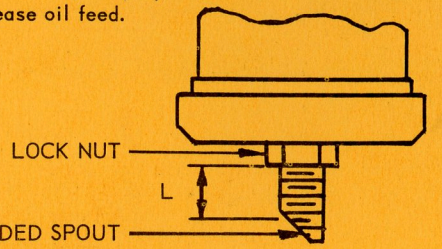
For Oiling Instructions on Pumps equipped with E-113 automatic Oil cup, see pages 5 and 6.

Too much Oil or Vacuum causes a Vapor discharge.

INSTRUCTIONS FOR E-113 AUTOMATIC OILER
OIL FEED ADJUSTMENT

Pump Size	Spout Setting "L"	When Using Pumps for Pressure, Reduce Pump Inlet to Diameter Shown Below	
A	1/4"	9/32"	
B	7/32"	3/8"	
B-3	7/32"	3/8"	
C	3/16"	9/16"	
C-4½	3/16"	5/8"	
C-6	3/16"	3/4"	
dbl. B-2 x 2	7/32"	3/8"	
dbl. C-3 x 3	3/16"	9/16"	
dbl. C-3 x 4½	3/16"	9/16" on C-3	5/8" on C-4½
dbl. C-3 x 6	3/16"	9/16" on C-3	3/4" on C-6
dbl. C-4½ x 6	3/16"	5/8" on C-4½	3/4" on C-6
D	3/16"	3/4"	
E	3/16"	3/4"	

Loosen lock nut & shorten spout projection to increase oil feed. Lengthen spout, decrease oil feed.



PUMPS WITH WOOL PACKED BEARINGS

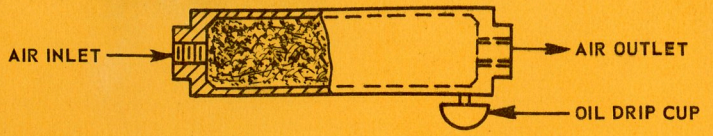
Lubricate both Bearings with S.A.E. 20 Oil once every Month.

PUMPS WITH ROLLER BEARINGS

Add grease to both Pump Bearings every few months. Use Grease with a high melting point of about 350°F (such as #F-926 from N. Y. & N. J. Lubr. Co. or "Lubriko" #M-32 from Master Lubr. Co., Philadelphia, Pa.)

LEIMAN BROS. NEW STATIC OIL VAPOR FILTER

PAT. PENDING



This new type filter operating on an entirely new and different principle has the ability to remove oil vapor from the air which passes through it.

It operates on the basis that air entering at a high velocity charges the special filter material with a static electrical charge which attracts any small particles of oil. The oil vapor condenses on the fibers of the filter material and drains to the bottom of the filter chamber and then drains out of the end connection. The chamber is made of metal with standard pipe tappings at the ends. The special filter material is sealed in and no replacement is necessary.

Designed to operate on the outlet of Leiman Bros. vacuum and pressure pumps one filter will remove over 90% of the oil vapor. If two filters are used nearly 100% efficiency is obtained. In addition, it also acts as a muffler – deadening the noise formerly heard on an open outlet.

In paper feeding or all other feeding applications where air pressure is required to blow onto the article this filter will do an amazingly good job at pressures under 15 lbs. You can now use your air to separate the sheets without fear of damage by contamination.

INSTRUCTIONS FOR E-113 AUTOMATIC OILER OIL FEED ADJUSTMENT

Pump Size	Spout Setting "L"	When Using Pumps for Pressure, Reduce Pump Inlet to Diameter Shown Below	
A	1/4"	9/32"	
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C	3/16"	9/16"	
C-4½	3/16"	5/8"	
C-6	3/16"	3/4"	
dbl. B-2 x 2	7/32"	3/8"	
dbl. C-3 x 3	3/16"	9/16"	
dbl. C-3 x 4½	3/16"	9/16" on C-3	5/8" on C-4½
dbl. C-3 x 6	3/16"	9/16" on C-3	3/4" on C-6
dbl. C-4½ x 6	3/16"	5/8" on C-4½	3/4" on C-6
D	3/16"	3/4"	
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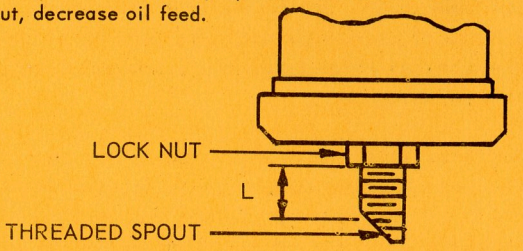
Loosen lock nut & shorten spout projection to increase oil feed. Lengthen spout, decrease oil feed.



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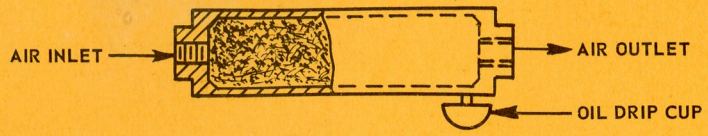

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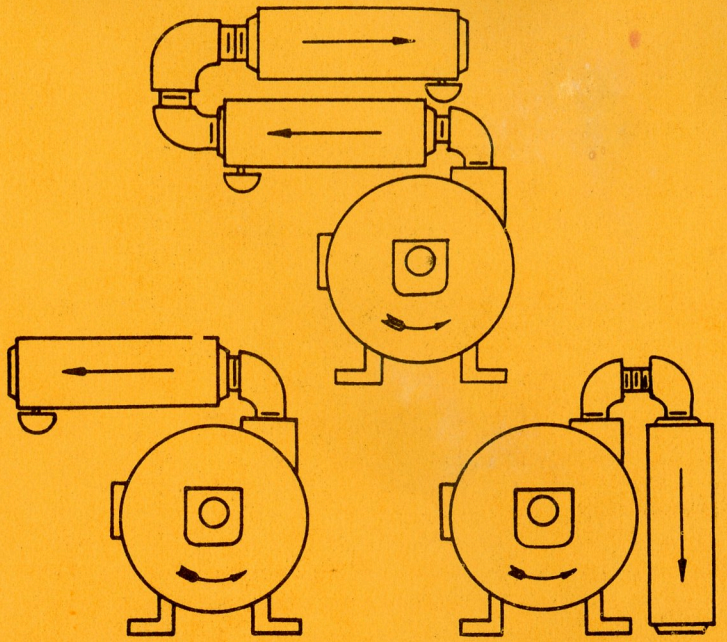


The sketches illustrate several ways of mounting Oil-Vapor Filter

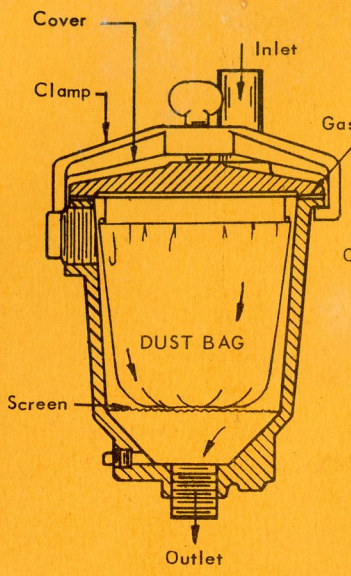
PUMP AND FILTER SIZES

Pump Size	Filter Size	Filter No.	Steady Vacuum	For Interrupted Vacuum Use
A	1/2" x 12" long	V-126-2	one	2 – V-126-1
B	1/2" x 12" long	V-126-2	one	2 – V-126-1
C	1/2" x 12" long	V-126-2	one	2 – V-126-1
C-6	3/4" x 18" long	V-126-1	two	3 – V-126-1

FOR 4 WING PUMPS

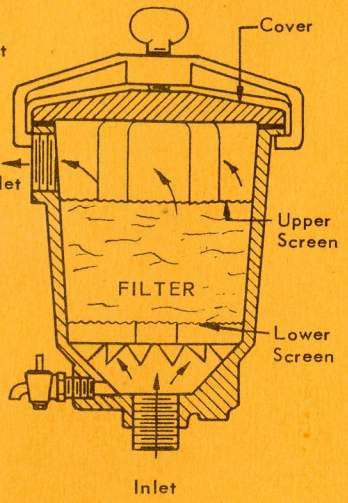
INSTRUCTIONS FOR

INLET DUST FILTER
W-126



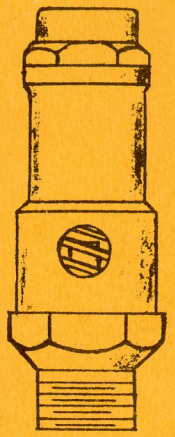
Remove cover and inspect bag at least once a week. Empty if necessary. If after running for a while the pump loses some of its suction power, it is an indication that the bag needs to be emptied.

OUTLET OIL SEPARATOR
U-126



Remove cover and inspect waste at least once a week. Change the waste as soon as it becomes saturated and pack in the new waste loosely. A change of waste will last perhaps a week or several months, depending on the service. If after running for a while, the pump appears to lose its blowing or suction power, it is an indication that the waste needs to be changed.

SPRING TYPE PRESSURE RELIEF VALVE



Prevents overloading pump and motor – will regulate pressure of air to be used.

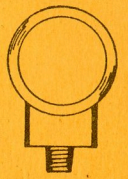


Figure 5245-G

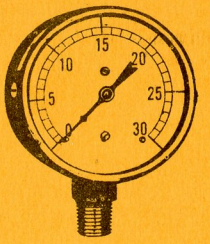
ELECTRICAL CONTROL

Automatically starts pump motor at a low pressure and stops it at a higher pressure. Also made to operate on vacuum. Both types are adjustable.

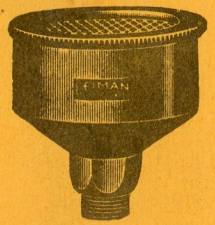
VACUUM AND PRESSURE GAUGES

Always use one to check up pump performance.

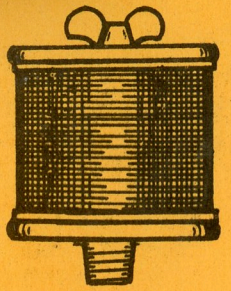
– GET ONE –



MUFFLERS

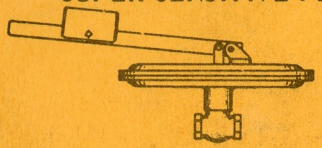


Pipe sizes $\frac{3}{8}$", ½", ¾"



Pipe sizes 1", 1¼", 1½", 2", 2½"

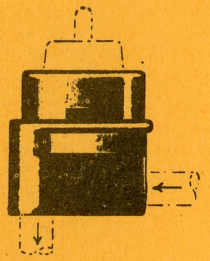
SUPER-SENSITIVE PRESSURE RELIEF VALVE

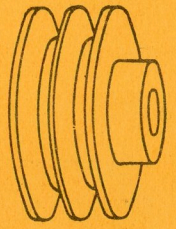


A very sensitive diaphragm type valve for close regulation of air or gas pressure.

OIL RETURN MUFFLER

Used on pressure pumps to muffle sound and to catch oil that might blow out of relief valve. Relief valve fits inside muffler. Supplied with bypass piping.



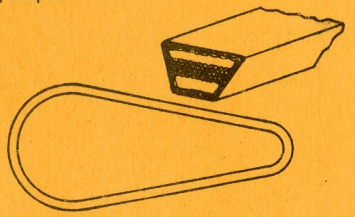


V GROOVE PULLEY

Furnished with one or more grooves in various diameters for motors and for our pumps.

V RUBBER BELT

Furnished 1/2" and 21/32" wide and in various lengths.



TO CORRECT ANY DIFFICULTIES IN USING LEIMAN BROS. AIR PUMPS

Check electric current in building with current of motor for correct running speed. Wrong current may mean wrong speed.

A loose pulley or gear may prevent pump from turning at correct speed.

A loose belt will cause uneven vacuum or pressure.

Any Leiman pump can be used for pressure or vacuum by connecting to the proper outlet or inlet.

EXCESSIVE NOISE

Pump may be running too fast. Check with speed indicator on shaft and compare with catalog. A slight reduction of the inlet of a pressure pump or the outlet of a vacuum pump will reduce noise; or use our muffler.

Too high a vacuum or too high a pressure will cause noise.

Use a relief valve to control vacuum or pressure.

Be sure that pump is lubricated properly.

HOT RUNNING PUMP

All pumps usually run so hot that you cannot hold your hand on them (about 150 to 250 degrees F).

Drop a few drops of water on the top of the pump and if they quickly boil off, the pump is too hot.

The higher the vacuum, the higher the temperature.

The higher the pressure, the higher the temperature.

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The higher the vacuum, the higher the temperature.

The higher the pressure, the higher the temperature.

Use a relief valve to control vacuum or pressure.

Do not run at more than maximum speed.

An old pump may overheat because it is filled with dirt.

Clean out as described on page 15.

Be sure that pump is well lubricated.

Keep inlet of pressure pump free and open.

Keep outlet of vacuum pump free and open.

A hot day will cause pump to run hotter.

We can supply watercooled pumps which do not overheat.

Do not run pumps at more than 20'' vacuum on gauge or more than is necessary for your job.

The higher the pressure, the higher the temperature. Do not run at more pressure than specified in catalog.

SMOKING PUMPS

Pumps do not really smoke but they sometimes give off an oil vapor. This is particularly true of vacuum pumps.

Oil vapor can be reduced or eliminated by using our Vapor Filter. See pages 7 and 8.

Oil vapor can be reduced by reducing the vacuum or by reducing the rate of oil feed or by using a thick enough oil. A thick oil of about S.A.E. 50 viscosity is recommended.

A slight reduction of the outlet of vacuum pumps will reduce oil vapor.

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A slight reduction of the outlet of vacuum pumps will reduce oil vapor.

Return broken wing or side end impression on paper with order for new wing.

Scrape old shellac from flange and rim of cylinder and clean with cloth.

Compare number on wings and wing slots in piston and insert wings in piston.

Replace piston and wings in cylinder. Re-lubricate Roller Bearings.

Coat outer rim of cylinder or flange with thin shellac before replacing flange.

USE NO GASKETS.

If it is necessary to remove the inner race of the Roller Bearing, a suitable Wheel Puller should be used.

REPLACING FLANGE WITH FELT WASHER IN BEARING

Do not remove washer, but in placing side flange on pump, see that none of the washers is caught on the end of the shaft as it enters the bearing.

Tighten flange bolts opposite to each other and evenly all around.

Rotate pump by hand as you proceed.

If pump does not rotate freely, repeat cleaning process just described.

OIL-COLLAR ON SHAFT PREVENTS AIR LEAKAGE (D to G Pumps)

Do not remove collar from shaft, or if necessary, take

notice of its position and replace, being sure that polished side is facing side of flange of pump and that pin that drives the collar is in proper slot or hole.

The face of collar is lapped smooth, so do not let any dirt between it and lapped face on pump flange. Dirt will scratch this face and allow oil and air to leak.

DON'TS

Don't hammer or use heavy wrench on any of the parts.

Don't place paper or metal gaskets in pump.

Don't file or try to refit any of the parts of a new pump.

Don't blame troubles on pump when you first receive it, as all pumps have been thoroughly run in and rigidly inspected before leaving the factory.

Don't use other than S.A.E. 50 oil in interior; 20 in bearings.

Don't expect a little oil placed in the pump to last all day.

Don't pour a large quantity of oil in the pump as it will be thrown out in the first few revolutions.

Don't oil with hand oiler because the oil will quickly blow out of pump – use oil cup.

Don't be alarmed if pump heats up when running. Temperatures up to 250°F. are not unusual.

Don't fail to protect the pump by using one of our dust separators. See page 9.